DOCUMENT RESUME

ED 223 482 SO 014 328

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TITLE Total, Direct, and Indirect Effects of Demographic and Community Characteristics on a Household's Propensity to Move.
PUB DATE 81
NOTE 22p.; Not available in paper copy because of marginal legibility of original document.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Children; *Community Characteristics; *Demography; *Family Characteristics; *Family Mobility; *Racial Factors; Research Needs; Social Science Research
IDENTIFIERS Family Size

ABSTRACT

The extent to which a family's propersity to move is directly affected by number of children, race, home ownership, duration of residence, and satisfaction with community was measured. A sample of 722 persons in the Chicago area responded to three telephone interviews in April, May, and June 1981. Results indicate that the more children a household has, the less likely it is to move (although this variable was quantitatively less important than others); race has no statistical significance; homeowners are less likely to move than renters; length of residence has a moderately significant effect on propensity to move; and the more satisfied a person is with the community, the less likely he is to move. Further research should explore other variables which may have an indirect effect on a family's propensity to move. (KC)

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"TOTAL, DIRECT AND INDIRECT EFFECT OF DEMOGRAPHIC AND COMMUNITY CHARACTERISTICS ON A HOUSEHOLD's PROPENSITY TO MOVE"

1981

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SP 014 328

ABSTRACT

The purpose of this study was to determine how much of the effect of specific demographic variables (home owners, duration of residence, number of children in a family, and race) on a household's propensity to move is direct effect and how much is indirect effect transmitted via the intervening variable of community satisfaction. A sample of 722 persons (aged 21 or older) selected by a process of Random Digit Dialing (RDD) from the Chicago SMSA and systematically derived from directories in the rest of the state participated in this study and were interviewed by telephone during April, May and June, 1981. It was hypothesized that most of the effect of the above-mentioned demographic variables on a household's propensity to move would be direct effect. Using an ordinary least square regression analysis and successive computation of reduce-form equations, results indicate that most of the effects of the demographic variables (with the exception of race, which was found to be statistically not significant) on mobility are mainly direct effects. Once community satisfaction has been added to the regression equations, as an intervening variable, little effect (in the case of Children) and no effect at all (in the case of LOR and Ownren) was accounted for by this variable. It was also found that, although quatitatively less important, Comsat has a direct effect on propensity to move. Results are discussed and further research is suggested.

INTRODUCTION

The literature on household mobility contains substantial disagreement concerning the effects of demographic and community variables on a household's propensity to move. The purpose of this study is to determine how much of the total effect of specific demographic variables (exogenous variables) on a household's propensity to move (dependent variable) is direct effect and how much is indirect, i.e. transmitted via intervening variables of community satisfaction. The specific demographic and community variables used are: number of children in the family; race; home ownership; duration of residence and satisfaction with the quality of the community.

A number of studies have shown the propensity to move to be related to characteristics of migrants, their dwelling units and their area of residence. Variables such as life-cycle level, home ownership, race, length of residency in the community, satisfaction with the quality of the neighborhood and others, have frequently been found to discriminate migrants from non-migrants (Butler, 1969; Lansing and Mueller, 1967; Morrison, 1971, 1972; and Simons, 1968). Although all of these studies took the above-mentioned variables into consideration, it still seems that the importance of these variables to predict tendency or propensity to move vary widely among the findings. A potential explanation for the inconsistencies in the findings may be the failure of such studies to analyze total effects by decomposing them into their constituent direct and indirect effects. (Alwin and Hauser, 1975; and Spaeth, 1975).

Taking the life-cycle variable, for example, Quigley and Weinberg (1977) argue that while the family life-cycle as the most important determinant of inter-metropolitan mobility is generally agreed upon, there is less agreement concerning the definition and measurement of that cycle. Obviously, this disagreement among researchers points to an ambiguous relationship between mobility and life-cycle stages. Rossi (1955) and Weinberg (1975), using simple mobility rates and regression respectively, found that mobility rates increased with family size.

Fredland (1974), using regression analysis, reports mixed results. He found that a family of two to four persons was more mobile than a single person or a large family unit. Okraku (1971) asserts that family size has a positive effect on mobility, but only in the household's perception of the dwelling unit's adequacy. Still other researchers such as Kain and Quigley (1975) reported a slight increase in mobility with household size, holding the number of workers and school-age children constant, but a slight decrease in mobility with the number of school-aged children, holding the number of persons and workers constant.

While Long (1972) and Speare et al (1974) confirmed this last finding, Fredland (1974) and Butler et al (1964) suggest that family composition is not very important in determining mobility.

In addition to the diversity concerning the definition of and findings from the life-cycle components, it seems that studies differ concerning other demographic variables as well. Taking race as an example, results range from no effect of this variable on mobility

for nonwhites in general (Morrison, 1971) to a substantially lower probability of moving for blacks (Kain and Quigley, 1975). Weinberg (1975) has found that when other variables are kept equal, black and Spanish-origin males have lower mobility rates than white males or females. Moreover, he found that the households' mobility behavior in several nonwhite racial groups (black, Oriental and Spanish) differed in important respects.

Regarding duration of residence, McGinnis (1968) and Myers et al (1967) argue that duration of residence is a very important part of the mobility process, while Morrison (1972) holds that factors such as age, income and duration of residence are not considered to directly affect the decision to move. Rather, the decision-making process works through residential satisfaction.

When examining studies' results relating to the effect of home ownership, it seems that in contrast to the inconsistent results given above, there is persuasive evidence that renters are more likely to move than home owners, even when many other influences are held constant (Abu-Lughod and Foley, 1960; Brown and Kain, 1972; Pickvance, 1973, 1974; Rossi, 1955; Speare et al, 1974; and Goodman, 1979).

Finally, concerning the notion of residential satisfaction, several studies suggest that neighborhood characteristics per se are correlated with household mobility. Stegman (1969) and Morrison (1972) believe that considerations of neighborhood quality dominate those of accessability and housing unit quality. Clark (1970) agrees with this argument. However, Zimmer (1973) rejects dissatisfaction with the neighborhood, and Goodman (1979) argues that: "contrary to popular

opinion, neighborhood character, school quality and commuting-related reasons precipitate only a small fraction of all moves" (p. 413).

It has been suggested that some of the inconsistencies in research findings discussed above may result from an incomplete interpretation of the findings. This avoidance on the part of some researchers to make complete interpretations is understandable to an extent. Calculations of indirect and total effects from even a relatively simple path model may lead to errors of logic and computation and rounding. However, detailed interpretation of findings is worth the effort particularly when it generated information related to important research questions.

Interpretation of both the direct and indirect effects affecting the total effect may or may not generate elucidations of various causal relationships. Thus interpretations of findings may answer questions of the form: "How does variable X affect variable Y?" or "Does mechanism Z contribute as much to explaining the effect of X on Y in population A as in population B?" (Alwin and Hauser, 1975). Thus, the direct and indirect effects of an antecedent variable must be taken into account in order to estimate the effect of that variable within a given causal model. The easiest way to address the issue of direct and indirect effects, is to compute a reduced form coefficient, the calculation of which totally ignores the intervening variable (Spaeth, 1975).

The Theoretical Model

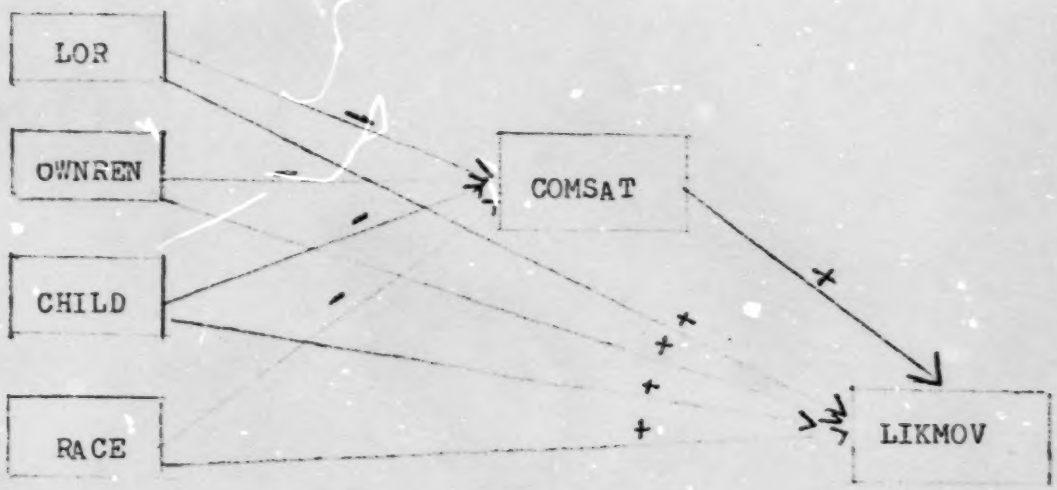

Figure 1: Path Model showing the effect of household and community characteristics on propensity to move

LOR - Length of residency
OWNREN - Homeowner/homerenter
CHILD - Number of children in the household
RACE - White
COMSAT - Satisfaction with the community as a whole
LIKMOV - Liklihood to move within 5 years

Morrison (1972) held that selected demographic factors do not directly affect the decision to move, but rather that the decision-making process works through satisfaction. The theoretical framework of this paper is based on the notion that demographic variables directly affect the decision to move, as Goodman (1979) argues. As shown in Figure 1 whether or not a household considers moving does not depend on the relative level of satisfaction with the current location.

Rather, the demographic variables of Figure 1 should directly affect the decision of a household in considering a move.

Consistent with McGinnis (1968) and Myers et al (1967) the importance of duration of residence in the mobility process is clear. A person who has lived for a length of time in a particular community is likely to develop deep social bonds which may deter him from moving. Morrison suggests that the decision to move will work through satisfaction with the community as a whole rather than through age, income or duration of residence. However, one can imagine that in some cases a person will remain in a community despite dissatisfaction with its quality; for instance financial reasons which make it impossible to move.

Hypothesis 1: The longer a person resides in a community the less likely he is to move.

Consistent with the findings (Abu-Lughod and Foley, 1960; Brown and Kain, 1972; Pickvance, 1973, 1979; Rossi, 1955; Speare et al, 1974; and Goodman, 1979), it is natural to assume that renters will be more likely to move than homeowners. Ownership gives a person more of a sense of belonging, developing a natural interest in the community as a whole. It also serves as a large financial incentive to remain in a community despite dissatisfactions, as well as an investment in that community.

Hypothesis 2: Homeowners are less likely to move than homerenters.

The number of children in the family must be taken into consideration in the decision-making process of whether to move or not. Even if a person is dissatisfied with certain community characteristics

he may think twice before carrying out his desire to move, if his children are of school age. Such a move may entail disconnecting children from peers, social activities and their sense of community. Moreover, the greater the number of children in a household the greater the financial burden on the average household to raise these children. Financial considerations then become a factor in considering a move, particularly if that move adds to that financial burden in the form of additional expenses (books, clothing, new furniture, etc.). Contrary to the conditional relationship between number of children in a household and mobility, as found in the literature (Fredland, 1974; Okraku, 1971; Kain and Quigley, 1975; Long, 1972; Speare et al, 1974; and Butler et al, 1964), the third hypothesis is:

Hypothesis 3: The more children a household has, the less likely that household is to move.

Concerning the variable of race, in contrast to no effect on mobility found in some studies (Fredland, 1974; and Morrison, 1971), the natural assumption is that whites are more likely to move than blacks and other minority groups (Kain and Quigley, 1975; and Weinberg, 1975). However, studies which arrive at the latter conclusion do not usually control for socio-economic or tenure characteristics which often makes whites much more mobile than other racial groups.

Hypothesis 4: Whites are more likely to move than blacks or other minority groups,

In contrast to the other variables given above, satisfaction with neighborhood quality is relatively subjective. Given that certain factors such as the satisfaction/dissatisfaction with the crime rate, are to be measured, each individual will answer slightly different

concerning the same community. Stegman (1969) and Morrison (1972), in fact, argue that the quality of neighborhood is more important in determining a move than more objective measures such as accessability or adequate housing. They are of course in sharp contrast to Zimmer (1973) and Goodman (1979) who reject residential satisfaction totally as being important to mobility. Each resident of a community will review the objective conditions of that community: crime rate, availability and adeqaucy of housing units, etc. and formulate his own, relatively subjective view of the community. This picture is, of course, subject to change if changes occur in any of the factors making up the community. This picture, since it is relatively subjective, will vary from resident to resident, so that some residents may remain in a community while others leave. In general, however:

Hypothesis 5: The more satisfied a person is with the neighborhood quality the less likely he is to move.

Methodology

The data for this study were obtained from a questionnaire designed to explore the kinds of housing people live in and their feelings about it. The survey used a statewide sample from Illinois drawn by a process of Random Digit Dialing (RDD) in the Chicago SMSA and systematically from directories in the rest of the state. The sample of 727 persons was interviewed by telephone during April, May and June, 1981. In cases where the head of the household was unavailable for interviewing, any member of the household over the age of 21 was considered suitable for interview.

The questionnaire consisted of a series of questions which asked respondents about their satisfaction with various aspects of their housing and geogrpahical location. In addition, information was gathered concerning the respondents' size of family, number of children in the household and other demographic characteristics, as well as socio-economic data relating to the respondent and his household. Respondents were asked whether or not they desired or had plans to move within the next one to five years.

Measurement of Variables

Dependent Variable

The dependent variable was determined by asking the respondent the following question: "How likely is it that you will move in the next five years?" Respondents were asked to rate their answers on a five-point scale ranging from 1 (very likely) to 4 (not very likely at all) with 8 being 'don't know'.

Independent Variables

Length of Residence - Respondents were asked to specify the length of time in their present home as measured in weeks, months and years.

Homeowner/Homerenter - Respondents were asked to answer whether they own or rent their home, which were coded 3 and 4 respectively. For the purpose of this study only homeowners were computed.

Number of Children in Family - Respondents were asked to list the number of people in their household, including themselves. They were asked to provide information concerning the family relationship, sex and year of birth of household members besides themselves. The highest category coded was eight or more.

Race - Respondents were asked to classify themselves by race. The categories provided were: white, black, Asian or something else. Whites were coded as 1 and all other races as 0.

Intervening Variable

Community Satisfaction - This was measured by a series of questions (five questions) about specific neighborhood and locational items. For each item the respondent was asked to reply on a five or six-point scale ranging from 1 (Strongly agree/ very satisfied) to 4 (Strongly disagree/ very dissatisfied) with 7 (in some of the questions) as 'Not applicable' and 8 as 'Don't know'. Table A in the Appendix details the variables included in the Comsat index along with the factor loading of each variable.

Data Analysis

The goal of our analysis is to establish whether or not a plausible argument may be made that community satisfaction acts as an intervening variable on household mobility. Consistent with our theory we must be able to show that most of the total effect of the exogeneous variables on mobility can be viewed as a direct effect, rather than an indirect effect acting through community satisfaction.

Towards the above purpose the ordinary least square regression method is applied. The method involves successive computation of reduce-form equations beginning with an equation containing only exogenous variables (in our case the demographic variables), then computing an equation adding intervening variables (in our case community satisfaction) in sequence from cause to effect. The first

equation provides us with the total effect of the demographic variables, while the second supplies their direct effect. To obtain the indirect effect we simply subtract the direct effect from the total effect, and then we compare their coefficients. To show whether community satisfaction, the intervening variable, has an effect, we look at the coefficients in the second equation. In our case, the effect of community satisfaction is both direct and total. (See path model p. 5).

Results

Using the ordinary least squares regression analysis, the proposed theoretical model was empirically tested and the effects of 'personal' and 'community' characteristics on a household's propensity to move were examined. To begin with, Table B in the Appendix provides the means, standard deviations and correlations among the model's variables. We can see from Table B that Comsat, the intervening variable, is weakly correlated with the other exogenous variables (Children, Ownren, LOR and Race). This means that Comsat can not possibly account for the effect of demographic variables.

Table 1, which follows, presents the total, direct and indirect effects of the model's variables on propensity to move. The coefficients in the total effect column of the table, present the effect of the demographic variables when the intervening variable, Comsat, is included in the regression equation, while the coefficients in the direct effect column of the table present the effect of the demographic variables without the intervening variable of Comsat.

TABLE 1: Total, direct, and indirect effects of the Model's variables on ahousehold propensity to move, using standarized (β weights) regression coefficients

Dependent Variable	Predetermined variables	direct effect	total effect	Indirect effect via COMSAT
	LOR	.196	.196	.00
	OWNREN	.306	.307	.001
LIKMOV	CHILDREN	.075	.062	.013
	RACE	-.026*	-.0013*	-.024
	COMSAT	-.1[illegible]3	.[illegible]3	
	R^2	.191	.177	

* Not significant at $p<.05$

By comparing the coefficients in both columns, one can see that Comsat, as an intervening variable, adds very little (in the case of Children) and nothing at all (in the case of LOR and ownren) to the effect of demographic variables on a household's propensity to move. More support for this argument can be generated by comparing the coefficients of determinations (R^2) of the two equations. The variance expressed by taking only the demographic variables is 17.7%. By adding the intervening variable, the explained variance is in-

creased by a marginal percentage (1.5%) from 17.7% to 19.1%.

Concerning H1, we see from Table 1 that LOR has a moderately significant effect on Likmov. In fact, all of the effect of LOR on mobility (.196) is direct effect. This suggests that LOR independently of Comsat can predict mobility, as we have hypothesized.

H2 was also confirmed by the results. Owning a house was found to have a relatively (as compared with the other variables in the model) strong and significant effect on propensity to move. As in the case of LOR, the direct effect of owning a house (.306) is practically equal to its total effect. When adding Comsat to the equation, the effect of owning a house declines by only .001. These findings suggest that regardless of satisfaction/dissatisfaction with the quality of the community, a person who owns a home is more likely to remain in his community.

Concerning H3, as to the ability of number of children to predict propensity to move, Children was found to have a statistically significant but quantitatively less important effect on mobility. Children has an effect of .075, of which more than four-fifths or 83% ($\frac{.062}{.075}$) is direct effect and less than one-fifth or 17% (.075- $\frac{.062}{.075}$) is indirect effect transmitted by Comsat.

H4 was not confirmed by the findings. Neither the direct effect nor the total effect of Race was found to be statistically significant when $P<.05$. However, we can argue that the direction of the effect is similar to the direction that we had predicted. The negative coefficients between Race and Likmov suggest that non-whites are less likely to remain in the community.

H5 was also confirmed. Comsat was found to be statistically significant and has an effect of -.123 on Likmov (in our case its total effect is equal to its direct effect). This finding suggests that the less satisfied a person is with the quality of the community, the less likely he will be to remain in the community.

DISCUSSION

The theoretical framework of this paper was based on the notion that the effect of specific demographic variables on a household's decision to move is direct effect. We have argued that the Comsat would not account for the effect of these demographic variables on propensity to move. In general, the results support this argument.

We have measured community satisfaction in terms of an index which includes measures of a household's relative satisfaction with various aspects of community and neighborhood qualities. We have shown that the effects of demographic variables on mobility are mainly direct effects. Once community satisfaction has been added to the regression equations, as an intervening variable, little effect (in the case of Children) and no effect at all (in the case of LOR and Ownren) was accounted for by this variable. However, we also found that, although quantitatively less important, Comsat has a direct effect on propensity to move. In our case, this suggests that those residents who are less satisfied with the quality of their community, will be less likely to stay in their community. This finding is supported by Zimmer (1970) and Goodman (1979) who found only a small effect of neighborhood quality on propensity to move. It negates Stegman (1969) and Morrison (1972) who believe that neighborhood characteristics per se are correlated with household mobility.

The results of the present study partially confirm Morrison (1972), who found that owning a house has a direct effect on propensity to move (see his index of Residential Satisfaction). However, while Morrison argued that duration of residence does not have a direct effect on mobility, this study did find such an effect. Both McGinnis (1968) and Myers (1967) found length of residence to have such an effect on mobility.

The fact that this study found little direct effect of number of children in a household on propensity to move is consistent with the findings of Brown and Kain (1972), but not with those of Rossi (1955) and Weinberg (1975).

To summarize, although we found that most of the effect of the demographic variables is direct effect, one should remember that the demographic variables along with the community satisfaction variable explain only a small amount of the variance, since the coefficient of determination for the complete model is 19.1. In other words, some causes other than those included in the model account for about four-fifths of the variance on a household's propensity to move. Further research should explore some other variables which may explain this portion of the variance and to look for other mechanisms which might account for the effect of demographic variables on a household's propensity to move. That is to say, to explore mechanisms other than community satisfaction which was found in this study not to have an indirect effect on propensity to move. It is important that the results of future research in these areas will be reported in terms of total, direct and indirect effects of the specific variables being measured. This will go far towards clarifying or resolving some of the inconsistencies in the lietrature to date.

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APPENDIX

TABLE A: Factor loadings of satisfaction variables on community satisfaction factor, using principal factor with iterations.

Satisfaction variables	Factor loading	Communality (h^2)
Place to raise children	.71014	.50430
Crowded community	-.43540	.18957
Recreational facilities	.45081	.20323
Safety from crime	.62664	.39268
Community as a whole	.70772	.50086

TABLE 6: Correlations, means, and standard deviation among the model's variables

	RACE	OWNREN	LIKMOV	LOR	COMSAT	CHILDREN
OWNREN	.202					
LIKMOV	.072	.374				
LOR	.125	.314	.290			
COMSAT	.226	.039	.125	-.037		
CHILDREN	-.216	.089	.080	-.051	.150	
Mean	.829	.704	2.50	128.64	10.91	.702
S.D	.376	.456	1.23	131.88	2.09	.943
N	727	727	699	726	616	727